

REMARKS

Claims 1-15 and 24-25 are pending in the present application. Claims 16-23 are withdrawn from consideration.

Claims 1, 6, 10-13 and 24-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim (U.S. Patent No. 5,374,413) in view of van Slooten (U.S. Patent No. 4,992,245).

Claims 2-5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of van Slooten in view of Stroder (WO Application No. 2004/056452).

Claims 7-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of van Slooten in view of Hardwick et al. (U.S. Patent No. 4,490,287).

Claims 1-15 and 24-25 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 10/540,433.

Claim 1 has now been amended. No new matter has been added. Reconsideration of the application in view of the amended and based on the following remarks is respectfully requested.

Rejections of Claims 1-13 and 24-25 under 35 U.S.C. § 103(a)

Claims 1, 6, 10-13 and 24-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim (U.S. Patent No. 5,374,413) in view of van Slooten (U.S. Patent No. 4,992,245). Claims 2-5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of van Slooten in view of Stroder (WO Application No. 2004/056452). Claims 7-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of van Slooten in view of Hardwick et al. (U.S. Patent No. 4,490,287).

Independent claim 1 of the present application has now been amended so as to recite a method for thermal treating granular solids in a fluidized-bed reactor comprising:

“at least one gas supply tube being at least partly surrounded by a stationary annular fluidized bed” and

supplying “microwave radiation to the mixing chamber through the at least one gas supply tube wherein the at least one gas supply tube is a wave guide.”

Support for this amendment can be found in the Specification, for example, on page 5, line 27-28 and page 6, line 17-20. Applicant notes that the term “central tube” and “gas supply tube” are used interchangeably throughout the Specification. Reference is made, for example, to the List of Reference Numerals on page 21 and to the original claims where both “central tube” and “gas supply tube” have the reference numeral “3”.

It is respectfully submitted that none of Kim, van Slooten, Stroder or Hardwick teach or suggest at least one gas supply tube being at least partly surrounded by a stationary annular fluidized bed and supplying microwave radiation to the mixing chamber through the at least one gas supply tube wherein the at least one gas supply tube is a wave guide. In contrast, Kim describes a fluidized bed reactor where microwaves are introduced through waveguides 24a and 24b and then through the reactor walls in front of the waveguides. See Kim, the Abstract, column 9, lines 52-57, column 10, lines 10-13, and Figure 3. As discussed in the present Specification, open microwave waveguides and microwave-transparent windows are disadvantageous. See Specification, page 1, line 14, to page 2, line 5. Kim nowhere teaches or suggests supplying microwave radiation to the reaction zone 11 through either of gas supply tube 8 or 9, or any gas supply tube, as required by claim 1. Kim also nowhere teaches or suggests that the at least one gas supply tube is a wave guide. In fact, the Figures of Kim clearly show that the microwaves 25 and 25a are provided through wave guides 24, 24a and 24b, which wave guides 24, 24a and 24b are separate from the gas supply tubes 8 or 9. See Kim, Figures 1, 3 and 4. Also, as the Office itself points out, Kim does not disclose a stationary annular fluidized bed, as recited. See Office Action of September 2, 2009, page 3, lines 2-3. None of van Slooten, Stroder or Hardwick cure this defect. Van Slooten, in contrast, merely describes a fluidized bed reactor where silane-containing gas and hydrogen gas are, in isolation of each other, passed into vessel 12 through a perforated gas distributor plate 25. See van Slooten, column 8, lines 50-65 and Fig. 1. Van Slooten therefore neither teaches nor suggests the at least one gas supply tube being at least partly surrounded by a stationary annular fluidized bed and supplying

microwave radiation to the mixing chamber through the at least one gas supply tube wherein the at least one gas supply tube is a wave guide, as recited in claim 1. With respect to Stroder, it is again respectfully submitted that that reference is not prior art to the present application because its effective date of November 14, 2003 is after the priority date, December 23, 2002, of the present application. A verified translation of DE 102 60 745.1, to which the present application claims priority, including a statement that the translation is accurate, was submitted for the Examiner's consideration to perfect the priority date of December 23, 2002 with the Applicants' response dated July 10, 2009. Regarding Hardwick, that reference in contrast merely describes introducing a microwave source into an oven 4 by means of a wave guide 5 with distribution occurring with the aid of an oven mode stirrer 6. See Hardwick, the Abstract, column 7, lines 30-33 and Figure 1. Hardwick therefore also fails to teach or suggest at least one gas supply tube being at least partly surrounded by a stationary annular fluidized bed and supplying microwave radiation to the mixing chamber through the at least one gas supply tube wherein the at least one gas supply tube is a wave guide, as recited in claim 1.

Because each of Kim, van Slooten and Hardwick are missing at least the above-recited features of at least one gas supply tube being at least partly surrounded by a stationary annular fluidized bed and supplying microwave radiation to the mixing chamber through the at least one gas supply tube wherein the at least one gas supply tube is a wave guide and Stroder is not prior art to the present application, it is respectfully submitted that any combination of Kim, van Slooten, Stroder and Hardwick, to the extent proper, could not render claim 1, or any of its dependent claims, obvious.

For the above reasons, reconsideration and withdrawal of the rejection to claims 1-13 and 24-25 under 35 U.S.C. § 103(a) based on Kim, van Slooten, Stroder and Hardwick is respectfully requested.

Nonstatutory Obviousness-Type Double Patenting Rejection

Claims 1-15 and 24-25 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 10/540,433.

Applicants respectfully submit that a Notice of Abandonment was issued for Application No. 10/540,433 on April 14, 2009 for failure to respond to a Restriction Requirement. Applicants respectfully submit that Application No. 10/540,433 is therefore no longer copending and that the nonstatutory obviousness-type double patenting rejection is therefore moot.

For the above reason, reconsideration and withdrawal of the rejection to claims 1-15 and 24-25 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 10/540,433 is respectfully requested.

CONCLUSION

In view of the above arguments, applicants believe the pending application is in condition for allowance.

The Commissioner is hereby authorized to charge any unpaid fees deemed required in connection with this submission, including any additional filing or application processing fees required under 37 C.F.R. §1.16 or 1.17, or to credit any overpayment, to Deposit Account No. 04-0100.

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Respectfully submitted,

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